Supplemental Information Report for Phase II Biological Assessment

As per the GWJNF Federally Listed Threatened and Endangered Mussel and Fish Conservation Plan (Conservation Plan), a Conservation Zone will be established and managed within the Dismal Creek Watershed. The Conservation Zone will include the Riparian Corridor and the Channeled Ephemeral Zone. The Conservation Zone will serve as a 1) filter strip to impede surface runoff, trap sediment, and filter and adsorb pollutants, 2) vehicle exclusion zone to prevent major ground disturbance adjacent to stream channels, and 3) shade strip to help maintain ambient stream water temperatures, moist habitats, and sources for large woody debris. Minimum widths are shown in Table 3 from the Conservation Plan, as seen below.

Table 3. Minimum Conservation Zone Widths for Federally Listed Mussel and Fish Species (In Feet, Measured as Described Above) On Each Side Of Stream

	Slope Class		
	0-10% Core Area	11-45% Core Area Plus Extended Area†	45%+ Core Area Plus Extended Area†
Perennial	100	125	150
Intermittent	50	75	100
Channeled ephemeral	25	25	25

The Habitat stressors listed in the Final Rule are water temperature, excessive sedimentation, habitat fragmentation, water chemistry, and water flow. There are no additional habitat stressors specific to the candy darter that were not addressed in the 2004 Conservation Plan. The only stressor specific to the candy darter is the hybridization and genetic swamping by the variegate darter. Nothing that is proposed by this project is increasing the chance of variegate darter introduction to the watershed.

The table below associates the candy darter stressor and threat with the corresponding Conservation Plan and Forest Plan standards that were developed to maintain the physical, chemical and biological components of aquatic ecological integrity.

Potential stressor of candy darter from Final Rule 11/21/2018	Threats to candy darter from Draft Recovery Outline	Conservation Plan Standards and Jefferson Plan Standards
Water Temperature	Increases in Water Temperatures	11-010, 11-011, 11-012, 11-016, 11-017, 11-019, 11-022, 11-034, 11-035, 11-036, 11-038, 11-039, 11-041, 11-042, 11-045, FW-14, FW-18, FW-27
Excessive Sedimentation	Sedimentation	11-001, 11-002, 11-003, 11-009, 11-011, 11-012, 11-021, 11-022, 11-023, 11-027, 11-028, 11-029, 11-030, 11-031, 11-032, 11-033, 11-034, 11-035, 11-036, 11-038, 11-039, 11-040, 11-041, 11-042, 11-043, 11-044, 11-045, 11-046, 11-047, 11-048, 11-049, 11-050, 11-051, 11-052, 11-053 11-054, 11-056, FW-12, FW-13, FW-16, FW-20, FW-21, FW-22, FW-23, FW-24, FW-25, FW-26, FW-27, FW-29, FW-30, FW-31
Habitat Fragmentation		11-049, 11-049, 11-050, 11-051, 11-052, 11-053 11-054, 11-055, FW-19
Water Chemistry	Spills and Discharges	11-007, 11-026, 11-033, 11-034, 11-035, 11-036, 11-040, 11-045, FW-28
Water Flow		11-008, 11-013, 11-049, 11-049, 11-050, 11-051, 11-052, 11-053 11-054, 11-055, FW-12, WF-19
Non-native Species Competition (specifically, hybridization with variegate darter*PRIMARY STRESSOR)	Variegate darter, and Other Non-native Species	11-006, 11-014, 11-054, 11-055
	Other Physical and Biological Perturbations	11-004, 11-005, 11-010, 11-011, 11-012, 11-013, 11-015, 11-016, 11-017, 11-018, 11-019, 11-020, 11-024, 11-025, 11-038, 11-039, 11-043, 11-044, FW-14, FW-15, FW-17, FW-18, FW-23, FW-27

Additional discussion with the U.S. Fish and Wildlife Service (USFWS) (personal communication 3/18/2020) confirmed that as stated in the Final Rule effective December 21, 2018, as published in the Federal Register vol. 83, No. 225, on 11/21/2018, the primary stressor for the candy darter is hybridization with the variegate darter. All other threats and habitat stressors associated with Forest Service habitat management are similar to those already addressed in the Conservation Plan for other species in other watersheds, and no additional measures are needed.

Following additional hydrological analysis, Dismal Units 16, 17, and 18 within the Standrock Branch watershed were dropped. This reduced the modeled sedimentation to both Standrock Branch and Dismal Creek, and thus decreased potential impacts to candy darters and their habitat.